

### **REMARKS**

The Applicants thank the Examiner for the careful consideration of this application, and for the interview with Examiners Breval and Won on April 29, 2010. The Office Action dated December 28, 2009 has been received and its contents carefully considered. Claims 1-22 are currently pending in this application. Claims 1 and 17-19 have been amended. Support for the amendments may be found throughout the specification, for example, in Figures 1, 3, and 5, the first, second and third embodiments, and in the specification on page 4, lines 17-23. Based on the foregoing amendments and the following remarks, the Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

### **Interview**

During the interview of April 29, 2010, the Examiners requested a discussion of the use of the phrase "another element of the light emitting device" that forms the light-emitting junction with the cathode. The junction between the cathode and another element was claimed in the Applicants' response to the Office Action of June 15, 2009, and accepted in the Office Action of December 28, 2009.

An electron emission device comprising a light emitting device, as used herein, may have multiple elements, such as, for example, semiconducting layers, electrodes or structural elements. Regarding, the cathode, an electron emission face of which may be made of diamond, and which may also form part of the junction at which light is generated. Since a junction cannot be formed from a single element, a second (i.e. another) element of the light emitting device may form the junction with the cathode at which light is generated. Examples of such an element may include a semiconducting layer (i.e., where the light emitting device emits light from a pn junction of diamond), a schottky electrode or a metal insulator semiconductor (MIS) structure.

### **Claim Rejection - 35 U.S.C. §103(a)**

On pages 2-4, the Office Action rejects claims 1, 9, and 16-19 under 35 U.S.C. §103(a), in view of Masahiro (JP 4-245135) in view of Osamu (JP 10-294077). On pages 4-7, the Office

Action rejects claims 2-8, 10-15, and 20-22 under 35 U.S.C. §103(a) in view of Masahiro (JP 4-245135) and Osamu (JP 10-294077) and further in view of Hirabayashi (US 5,541,423). As per claim 1, Applicants respectfully traverse for at least the following two reasons.

First, the combination of Masahiro and Osamu fails to disclose or suggest that "the light emitting device generates light at **the** junction," where the junction is formed by the cathode and another element of the light emitting device. In the device described by Masahiro, light is generated at the p-n junction formed at the interface of layers 104 and 105 (referring to figures 1 2, 3, and 5), which is **not** a junction with the cathode (element 107 of Masahiro). The teachings of Osamu do not remedy this deficiency, since Osamu describes only the material of the electron emission cathode, and has no bearing on the arrangement of the light-emitting portion of the device.

Second, the combination of Masahiro and Osamu fails to disclose or suggest that "at least a portion of the light irradiates **through** the cathode toward the electron emission face," as recited in amended claim 1. Instead, Masahiro describes a separate LED (see figures 2, and 4), where light is projected through open space **onto** the electron emission face from an external source located to the side of the electron emission face.

For at least these two reasons, Applicants request the rejection be withdrawn for claim 1.

As per claim 17, the rejection of claim 17 should be withdrawn for at least the same reasons as for claim 1. In particular claim 17 recites "the light emitting device generates light at **the** junction," and "at least a portion of the light irradiates through the cathode toward the anode."

As per claims 9, 16 and 18-19, these claims depend, directly or indirectly, from claims 1 or 17, and overcome the rejection for at least the same reasons. Applicants respectfully request the rejections be withdrawn.

As per claims 2-8, 10-15, and 20-22, these claims depend, directly or indirectly, from claims 1 and 17, and overcome the rejection for at least the same reasons. Hirabayashi does not remedy the deficiencies of Masahiro and Osamu. Applicants respectfully request the rejections be withdrawn.

### Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

The Commissioner is authorized to charge any deficiency in any patent application processing fees pursuant to 37 CFR § 1.17, including extension of time fees pursuant to 37 CFR § 1.17(a)-(d), associated with this communication and to credit any excess payment to Deposit Account No. 22-0261.

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Respectfully submitted,

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